

## WHAT IS CLAIMED IS:

1. An image processing apparatus which performs a first operation and a second operation different from the first operation, the image processing apparatus comprising:

5 a first processor which processes image data in correspondence to the first operation;

a second processor which processes image data in correspondence to the second operation;

10 a memory shared by said first and second processors; and

15 a controller which changes connection of said memory to said first and second processors to connect said first processor to said memory in the first operation and to connect said second processor to said memory in the second operation.

2. The image processing apparatus according to claim 1, wherein the first operation is not performed at the same time as the second operation.

3. The image processing apparatus according to claim 1, further comprising an image reader which reads an image by scanning a document; wherein the first operation is prescan for acquiring document information before reading the document image, and the second operation is normal scan for reading the document image; wherein said first processor  
25 processes the data on the document image acquired on prescan,

and said second processor processes the image data read in normal scan.

4. The image processing apparatus according to claim 3, wherein said first processor comprises a processor for one of automatic exposure, automatic color selection and document size detection and writes data obtained by sampling the document in the prescan to said memory.

5. The image processing apparatus according to claim 3, wherein said second processor comprises a density converter, and said memory stores a conversion table for density conversion performed by said density converter.

6. The image processing apparatus according to claim 3, wherein said first and second processors are constructed by a common device wherein a function thereof can be rewritten, and said controller rewrites the function of said device to operate as said first processor on prescan and to operate as said second processor on normal scan.

7. The image processing apparatus according to claim 6, wherein said device comprises a field gate programmable array.

8. The image processing apparatus according to claim 1, further comprising a printer which prints an image on a sheet of paper;

wherein the first operation is test print for printing predetermined pattern data, and the second

operation is normal print for printing document image data; said first processor outputs the pattern data for the test print, and said second processor processes the document image data to print the document image.

5 9. The image processing apparatus according to claim 8, wherein said second processor comprises a density converter, and said memory stores a conversion table for density conversion performed by said density converter.

10 10. The image processing apparatus according to claim 8, wherein said first and second processors are constructed by a common device wherein a function thereof can be rewritten, and said controller rewrites the function of said device to operate as said first processor on test print and to operate as said second processor on normal print.

15 11. The image processing apparatus according to claim 10, wherein said device comprises a field gate programmable array.

20 12. An image reading apparatus which performs prescan for acquiring document information before reading a document image and performs normal scan for reading the document image, the image reading apparatus comprising:

a first processor which processes the data acquired in prescan;

25 a second processor which processes image data acquired in normal scan;

a memory shared by said first and second processors; and

a controller which changes connection of said memory to said first and second processors to connect said first processor to said memory on prescan and to connect  
5 said second processor to said memory on normal scan;

wherein said memory stores document information acquired in prescan and stores conversion data for conversion of the image data on normal scan.

10 13. The image reading apparatus according to claim 12, wherein said first and second processors are constructed by a common device wherein a function thereof can be rewritten, and said controller rewrites the function of said device to operate as said first processor on prescan and to operate as  
15 said second processor on normal scan.

14. An image forming apparatus which performs test print for printing predetermined pattern data and performs normal print for printing document image data, the image forming apparatus comprising:

20 a first processor which generates the predetermined pattern data for test print;

a second processor which processes image data for normal print;

a memory shared by said first and second  
25 processors; and

a controller which changes connection of said memory to said first and second processors to connect said first processor to said memory on test print and to connect said second processor to said memory on normal print;

5                wherein said memory stores the pattern data on test print and stores conversion data for conversion of the image data on normal print.

15.            The image forming apparatus according to claim 14,  
10            wherein said first and second processors are constructed by a common device wherein a function thereof can be rewritten, and said controller rewrites the function of said device to operate as said first processor on test print and to operate as said second processor on normal print.